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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|---|-------------|-----------------------|----------------------|------------------|
| 10/090,277  | 03/04/2002  | Maximillian Fleischer | A35006 (071308.0294) | 4174             |
| 21003   | 7590        | 04/21/2005            | EXAMINER             |                  |
| BAKER & BOTTS<br>30 ROCKEFELLER PLAZA<br>NEW YORK, NY 10112 |             |                       | SIEFKE, SAMUEL P     |                  |
|   |             |                       | ART UNIT             | PAPER NUMBER     |
|   |             |                       | 1743                 |                  |
| DATE MAILED: 04/21/2005                                     |             |                       |                      |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/090,277 | <b>Applicant(s)</b><br>FLEISCHER ET AL. |  |
|                              | <b>Examiner</b><br>Samuel P. Siefke  | <b>Art Unit</b><br>1743                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-10 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1**, **4** and **5** are rejected under 35 U.S.C. 102(b) as being anticipated by Tsutsumi et al. (USPN 3,663,870).

Tsutsumi discloses a semiconductor device passivated with a rare earth oxide layer. The semiconductor device comprises a gas sensitive field effect transistor that comprises a substrate (fig. 6 ref. 71; col. 1, lines 50-70) having a source (72) and a drain (73) areas and at least one gate electrode (G in fig 6) associated with a gas sensitive layer comprising an inorganic metal oxide (scandium oxide; col. 5, lines 70-73; col. 2, lines 26-66) applied to the substrate (col. 6, line 66- col. 7, line 39). The semiconductor further comprises an electrical heater (45 and 46; col. 3, lines 26-29). The semiconductor further comprises a plurality of different gas sensitive layers (col.6, lines 18-23).

Claims **1** and **2** are rejected under 35 U.S.C. 102(b) as being anticipated by DE 4028062.

DE '062 discloses a gas sensor for measuring concentration of organic vapor in aromatic mixtures with polysiloxane absorbent contiguous substance forming ions or

disposed over gate with wide sensitivity range for alcohols etc. (abstract). The sensor comprises a semiconductor substrate (2) with source (3) and drain (4) and an insulating film (5) on the substrate covered with a metal film with breaks (6) and gate (7). A change in the threshold potential is used as sensor signal. Outside of the gate (7) is covered with a layer (8) of an adsorbent (I) for the target molecules of vapor of organic molecules contiguous substrate (II) producing ions or dipoles (abstract).

Claims **1, 6, 7, 10** are rejected under 35 U.S.C. 102(b) as being anticipated Inami et al. (USPN 4,638,346).

Inami discloses a field effect transistor type moisture sensor that comprises a field effect transistor device incorporated with a moisture sensitive means (abstract; col.col. 1, line 17- col. 2, line 9), the electrostatic capacity or the electrical conductivity of which varies with the absorption and the desorption of water vapor or moisture, wherein the moisture sensitive means is disposed on a gate insulating film of the field effect transistor device to form an electrode structure (abstract). The sensor comprises a source (2) and a drain (3) on silicon substrate (1). The surface of the silicon substrate is covered with a silicon dioxide film having through holes for the source (2) and the drain (3). Double layers of the silicon dioxide film (5) and a silicon nitride film on the silicon substrate form between the source (2) and drain (3) a gate insulating film (100) (col. 4, lines 18-41). The moisture sensor containing a metal oxide film has an excellent heat resistance and responds rapidly and has a high temperature resistance coefficient, and a gas insensitive transistor for compensating for temperature effects (col. 2, lines 35-41; col. 3, lines 45-49; col. 4, lines 61-68).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 4028062 in view of Inami et al. (USPN 4,638,346).

DE '062 discloses a gas sensor for measuring concentration of organic vapor in aromatic mixtures with polysiloxane absorbent contiguous substance forming ions or disposed over gate with wide sensitivity range for alcohols.

DE '062 does not teach the specific use of polycyclopentylsilsesquioxane or the use of a moisture sensitive layer.

Inami discloses a field effect transistor type moisture sensor that comprises a field effect transistor device incorporated with a moisture sensitive means, the electrostatic capacity or the electrical conductivity of which varies with the absorption and the desorption of water vapor or moisture, wherein the moisture sensitive means is

disposed on a gate insulating film of the field effect transistor device to form an electrode structure. It would have been obvious to one having an ordinary skill in the art to modify DE '062 to include the moisture sensitive layer of Inami to provide a more precise and balanced measurement because moisture interferes with alcohol detection (abstract DE '062) is known in the art.

### ***Allowable Subject Matter***

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest a gas sensitive layer comprising a polycyclopentylsilsesquioxane.

### ***Response to Arguments***

Applicant's arguments filed 1/21/05 have been fully considered but they are not persuasive. Applicant argues, "Tsutsumi, consequently, does not disclose a gas sensor or related subject matter." The Examiner would like to point to col. 1, lines 51-70, where Tsutsumi discloses a field effect transistor having an insulator gate comprised of SiO<sub>2</sub>. Applicant also claims a semiconductor that has a field effect transistor (FET) having an insulator gate film which detects a chemical in a gas by measuring a change in the electrostatic capacity by an interaction with a chemical species with the film layer. As applicant is claiming a structure identical to that disclosed by Tsutsumi, it would appear that Tsutsumi's device is inherently capable of detecting a chemical in a gas.

The Applicant argues, "Inami discloses a device for measuring humidity, but offers no suggestions of a gas-sensitive sensor equipped with a field effect transistor." The Examiner would like to point to col. 3, lines 5 where Inami specifically discloses "The field effect transistor type moisture sensor of this invention..." Therefore all the limitations are anticipated.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam P. Siefke



April 15, 2005



Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700